

## Work Plan

### I. **Project Title: Building Climate Knowledge and Resilience through Intra-City Exchange** (a climate resilience project)

#### **Summary Description**

This project of the Environmental Education Association of New Mexico (EEANM) brings together students, teachers and community members from Albuquerque's most diverse neighborhoods to learn together about climate change, adapting gardening techniques with innovation and creativity for a hotter and drier climate while reducing water, air pollution, and the use of insecticides. Sixty middle school students will gather for six trainings over the year, rotating between three garden sites - the Desert Oasis Teaching Garden; Cornelio Candelaria Farm with partner Grow the Future; and the Wilson Middle School Edible Forest. The students will do hands-on activities pertaining to soil moisture conservation, water harvesting, erosion control, flood vs. drip irrigation, adaptive plant choices, climate change science and mitigation, local food movement, pest abatement and other related topics. The students will record their learning throughout the year in books, posters, videography and other means. At the end of the year, they will present their work at a public Symposium with parents, school administrators, and community members.

Community members, students, families and teachers will be surveyed for what topics they would like presented at a kick-off community forum. The community forum will feature some of the speakers from the student trainings, providing an opportunity for local community farms and individual home gardeners to learn more about climate change and ways to increase the efficiency of their own gardens. Their interests and questions will inform the year of student work, with work products (books, posters, videos, etc.) addressing those issues being presented at the final Symposium.

Another component of this project is to extend the learning to the greater educational community by offering a climate education teacher workshop will be offered to area teachers, with NM's most highly skilled climate change educators presenting science and curricula resources.

This project offers students, teachers and community members technical expertise to improve practices in their school and community gardens as our climate becomes warmer and drier. Youth participants will be empowered to tackle challenges related to climate change as they move into adult citizenship and become our leaders and decision makers.

#### **Goals:**

- Empower youth to meet the challenges of a changing climate with resiliency and problem solving skills.
- Improve environmental quality of garden practices by conserving soil and water, thereby reducing air, water and chemical pollution and hazards.
- Teach youth and community how to employ both traditional and innovative technologies to monitor, analyze and solve the problems specific to the desert southwest resulting from a changing climate.
- Foster working relationships between students from different socio-economic backgrounds.
- Increase student, teacher and community knowledge about climate science, especially in relation to local food production and water availability.

**Location:** Albuquerque, NM, zip codes 87105, 87108 and 87111.

**Environmental Statutes addressed:** 1) Clean Water Act, 4) Clean Air Act, and 6) Federal Insecticide, Fungicide and Rodenticide Act

**Climate Resiliency Focus:** Provide students, teachers and community members with information, techniques and skills to respond to changes in climate in relation to local food production. These practices address Qualified Environmental Statutes by reducing water pollution from soil runoff; air pollution by using proper mulching techniques; and insecticide use by teaching alternative, organic farming methods to control pests.

## II. Environmental, Public Health and Community Climate Resiliency Information

New Mexico, especially the lower lying areas of the state such as the Rio Grande Valley, is “ground zero” for climate change forecasts. Albuquerque is expected to become hotter and drier and has already begun to reflect those changes in average temperatures, earlier last frost dates, and other phenological events. Meanwhile, our gardening practices reflect a myriad of outdated and inefficient practices that squander precious water and topsoil as it runs off into the Rio Grande, creating more water pollution. Frequent lack of proper mulch is another practice that allows spring winds to remove topsoil and send it airborne, contributing to poor air quality and high rates of asthma. A lack of knowledge of natural methods for reducing pest damage stymies production in the organic gardens.

The affected communities are Albuquerque’s most disadvantage neighborhoods, with Wilson Middle School and the South Valley schools all being Title 1, 100% free lunch schools. These communities are disproportionately vulnerable to environmental degradation historically, with the City of Albuquerque locating most of the polluting services and land uses in the southern part of the city. For example, the wastewater reclamation plant is in the South Valley, as are industrial land uses and salvage yards. There are also superfund sites due to dairy and other agricultural uses in previous eras. Now there is a large plume of jet fuel that leaked from underground storage tanks at Kirtland Air Force Base, located in the south of the city, quite near Wilson Middle School and Candelaria Organics, two of our sites for this project. City water wells are threatened by that jet fuel, as it moves ever closer to high producing wells. It also threatens the safety of the food grown in gardens where the fuel is located and we don’t know exactly where the borders are. In addition to environmental degradation, the communities are food deserts, with lack of fresh fruits and vegetables and excessive fast food options.

Wilson Middle School is in the heart of the “International District,” so named for the many immigrant families from Latin America, Vietnam, Laos, African nations and other countries. The name was recently suggested to replace the long-term moniker, “War Zone,” which referred to the high crime and gang activity. The international district is bounded by Lomas on the north, Gibson on the south, San Mateo on the west and Wyoming on the east.

The South Valley population of Hispanic or Latino is 77.59% and 22% live below the poverty line. Per capita income is \$13,217.

This project links to the **EPA’s Strategic Plan Goal #1: Addressing Climate Change and Improving Air Quality**, “Objective 1: Address Climate Change. Minimize the threats posed by climate change by reducing greenhouse gas emissions and taking actions that help to protect human health and help communities and ecosystems become more sustainable and resilient to the effects of climate change.” It also addresses **EPA Strategic Plan Goal 2: Protecting America’s Waters**, “FY 2014–2015 Agency Priority Goal: Improve, restore, and maintain water quality by enhancing nonpoint source program leveraging, accountability, and on-the-ground effectiveness to address the nation’s largest sources of pollution.”

## III. Historical Connection to the Affected Community

*Grow the Future* is a food justice and health literacy education program designed to develop leadership and improve health within the community through focusing on sustainable agriculture and intergenerational mentorship. The work of Grow the Future is currently based in partnership with Cornelio Candelaria Organics, a 300 year old farm stewarded by Lorenzo Candelaria and Dora Pacias. Lorenzo is a 7th generation farmer on this land and is dedicated to sustainable stewardship of the land. The farm is located at 505 Foothill Dr. SW, 87105 in Atrisco, New Mexico in the South Valley of Albuquerque. Grow the Future brings local students to the farm and engages in outreach at their schools. Albuquerque’s South Valley is the old, Latino area of Albuquerque, with its roots in agriculture. Today it is still a stronghold of cultural preservation and agricultural pride. This video on *Grow the Future’s* website illustrates its role in the community: <http://www.growthefuturenm.org/#!gtf-videos/c24qy>.

Wilson Middle School is in the heart of the “International District.” This community is challenged by issues related to race, class, citizenship status, poverty, and crime. Mary Erwin, Wilson Middle School science teacher, has worked with the students to create a phenomenal garden, now becoming an “edible forest.” Ms. Erwin has dedicated her talents and skills to working with Albuquerque’s most at-risk students, offering them opportunities for responsibility and success as they co-create the evolving project. The school is located in southeast Albuquerque, at 1138 Cardenas Drive Southeast, Albuquerque, NM 87108. To the south of the school is Kirtland Air Force Base, which has experienced budget cutbacks that have contributed to a declining economic situation and lack of business opportunity in the area.

The Desert Oasis Teaching Garden, a project located at Albuquerque Academy, an independent 6-12 school in Albuquerque, has a mission to share, serve and exchange knowledge about how to garden in a hotter, drier land. Karen Temple Beamish, the Sustainability Coordinator at Albuquerque Academy, is a Climate Change Fellow for the EECapacity Project and is dedicated to extending the benefits of the DOTG to all community members and is enthusiastic about sharing their garden and knowledge with the other schools and community members. The website is at this link: <http://www.thedotgarden.org/>.

The Environmental Education Association of New Mexico has been working for two years with partners in the South Valley and the International District through its work with the EECapacity NM Consortium. The project involved working with community organizations to expand networks and relationships in an effort to create more diverse environmental education collaborations. Through this work, all of the partners for this proposed project have interacted, but the project for this proposal is entirely new. EEANM’s Executive Director’s background is in community planning, and has previously worked as project manager of a revitalization project in the South Valley (1996), resulting in a small business development center that since then has fostered hundreds of small businesses. She has worked with the Rio Grande Community Development Corporation and various community organizations over the past 20 years.

Teachers Mary Erwin and Karen Temple Beamish, although they work in quite different environments, are both former Outstanding Environmental Educators of the Year, an award conferred by EEANM (’07 and ’08). As such, they have continued to work with EEANM and engage in community activities such as the EECapacity Consortium, where they have forged their own relationships with local community groups. Grow the Future’s Executive Director, Travis McKenzie, is deeply rooted in the South Valley, where his organization focuses on youth development through food production and cultural preservation. Grow the Future’s activities occur in partnership with Cornelio Candelaria Organics (locally known as Lorenzo’s Farm) in the South Valley.

This group of partners is currently working together to host an environmental justice seminar in Albuquerque in spring 2015, using the Environmental Justice simulation activity developed in Utah with an EPA EJ grant a few years ago. We are committed to partnership and mutual support as we continue to find ways to increase our community’s environmental literacy.

#### IV. Project Description

##### i) Activities and Timeline

###### **Approx. date    Activity**

All activities take place in the 2015 - 2016 school year.

7/15/2015	Develop and sign MOUs with partners and sub-grantees. Clear roles and responsibilities are essential for a smooth process involving multiple partners.
7/30/2015	Sign MOU with three teachers of three classes to participate with their 60 students that will work consistently with the project the course of the school year. Teachers will commit to administering pre- and post- surveys to assess student learning, facilitating the attendance of their students at 6 trainings over the course of the year, allowing the project team to make a classroom visit at mid-year to monitor progress and ensuring that their students create a product that documents their learning and responds to

community interests. Finally, they will attend and present at the final Symposium.

- 8/3/2015 Plan Climate Change Educator workshop, develop flyer and begin marketing to educators. Organize agenda, speakers and program. We will seek the region's most highly qualified climate change educators to offer the teacher workshop to local teachers, with priority given to target area (International District and South Valley) teachers.
- Focus will be on adapting strategies, sustainable actions, and resources to promote student and community resilience to climate change effects.
- 8/20/2015 The Project Team will visit the three classrooms to introduce project to students before 6 trainings begin. The teacher and project team will assess student climate change knowledge with a survey and discussion, recording the results for comparison at completion of the project.
- 9/1/2015 Hold first community meeting to share information about the project, begin climate change education process, and determine needs and questions of community members to guide trainings and student work. This meeting will be held at Wilson Middle School as part of the Consilio de Padres (Council of Parents). Parents of all three classes of students from the three different schools will be invited, as well as community members. Refreshments will be served.
- The Albuquerque Academy students are planning to use their flip video cameras to collect climate change stories from community participants. This will be an ongoing project to be presented at the final Symposium. The other two classes may also use the cameras if they would like to do the same or other video production.
- 9/4/2015 First Student Training with expert speaker. We will recruit the region's most innovative, creative and exciting presenters. In most instances, we will use other resources to extend the presentations to possibly nighttime or next day presentations to other groups. This way, we may be able to recruit top notch speakers like Christy Wall, PhD, (atmospheric science and climate change), Gary Nabhan (local food movement) in Tuscon, Sandra Postel (irrigation expert) in NM, Brad Lancaster (rainwater harvesting), or others .
- 9/12/2015 Present Climate Change Educator Workshop. NM has several highly qualified climate change educators who will take lead roles in teaching this workshop. We will offer stipends of \$100 to teachers to ensure filling the class. This is not a workshop offered regularly in NM, so we want to make sure that it is a success and can become a regular offering.
- 9/22/2015 Second Student Training with expert speaker, at peak fall harvest.
- 10/19/2015 Third Student Training with expert speaker, while gardens are still producing.
- 12/10/2015 Fourth Student Training with expert speaker, planning activities at Wilson Middle School.
- 1/11/2016 Classroom visits to each of the three schools to monitor student work products progress. Working indoors during the cold months.
- 3/25/2016 Fifth Student Training with expert speaker, getting gardens prepared for spring.
- 4/15/2016 Sixth Student Training with expert speaker, planting, mulching, and learning.
- 5/8/2016 Symposium - students present work to community. Celebration of learning and doing. Assess student learning, record work products with photos or copies.

5/20/2016	Evaluation and final meeting of project team to debrief and plan follow-up actions.
6/15/2016	Prepare final report for EPA.

## **ii) How the Organizations Will Work Together**

Travis McKenzie, Mary Erwin, Karen Temple-Beamish and Barbara Garrity have worked together in the past several years in different capacities and know each other well. We are confident in our shared vision for this project and our abilities to work through any challenges. Barbara Garrity will serve as Project Manager, and handle all the coordinating, scheduling, presenter recruitment, payments, reporting and trouble shooting. We all agree that it is important to not disperse those coordination responsibilities, as that is when confusion reigns. In addition, we will create Memos of Understanding between EEANM and the sub-grantees so that responsibilities are clear and mutually agreed. Karen Temple Beamish and Mary Erwin will be responsible to have their students at the trainings and on task with creating their work products. Travis McKenzie will recruit one of his South Valley middle school classes to participate in the project along with the two other classes. All three of the middle school classes of students will work together for the entire year, with every training to include activities to mix up the students, break the ice, and have them working together in groups.

All the partners recognize the importance of serving the community of parents and interested parties that attend the community meetings and provide their input for the topics that will be explored and presented. We have lists of experts, some with national and international recognition, who are based in the Southwest, which will be used to find the presenters that will respond to the main interests of our community.

Our team will meet in person, via email and telephone, with emailed preferred so that we are all in the loop for all arrangements. This team has a proven record of reading emails and responding to phone calls, issues that seem to be more problematic as time passes. We will be a highly functioning team.

## **V. Organizational Capacity and Programmatic Capability**

EEANM is an established, stable organization, with an experienced Executive Director. Our organizational administrative systems include a part-time bookkeeper, an organization Treasurer, and the Executive Director, all of whom are well-trained using the QuickBooks accounting software. We have online access so that records can be checked at any time. In 2013 we amended our Policies and Procedures Handbook to include all of the federal requirements for procurement, drawdown policies, and record management. We have received a letter from the EPA stating that our procedures meet federal requirements.

EEANM has successfully completed one EPA grant, the 2012 Region 6 Sub-grants Program EE Grant, 00F48301. The Project Officer was Bonnie King in Dallas. We also completed as a sub-grantee three EPA sub-grants: Louisiana Division of Wildlife and Fisheries Region 6 Sub-grants (managed by Venise Ortego; Project Officer was Bonnie King) and 2 EECapacity Consortium sub-grants in 2012 and 2013 (managed by Dr. Marianne Krasny, Cornell Univ.; EPA Project Officer unknown), having met all reporting requirements and deadlines, and providing additional information as part of a randomly selected EPA "Desk Review."

EEANM will effectively manage and complete this project by adhering to timelines, working closely with the partner organizations, troubleshooting when necessary, and conferring with the EPA project officer, as needed.

## **VI. Qualifications of the Project Manager**

Barbara Garrity, Project Manager, has worked as EEANM's Executive Director for 8 years. During that time, she has continually reached out to new partners, particularly those working in environmental justice. She has a background in Community and Regional Planning, and previously worked as a Planner for a large Architecture and Planning firm. One of her projects during that time was working in Albuquerque's South

Valley with the local community development organization to create a revitalization plan, which has since been implemented. She is acquainted with most of the South Valley organizations, several of which were involved with the EECapacity Consortium, which she managed for the past two years. Ms. Garrity speaks Spanish and has a Master's degree in both Latin American Studies (with a focus on the American Southwest) and Community and Regional Planning.

Ms. Garrity has strong project management skills, knows how to set achievable goals and adheres to timelines. She also knows how to incorporate community involvement and decision making. She has academic as well as practical experience directly related to community work. Her methods are inclusive and welcoming, respecting all voices and participants.

As far as financial management skills, she has mastered the QuickBooks program for nonprofit management and has successfully managed the \$150,000 EPA Sub-Grants Program in 2012. She is detail-oriented and will ensure that proper procedures are followed for all aspects of the grant. EEANM's Policies and Procedures manual includes all the procurement and documentation requirements as outlined in the federal procurement regulations cited in the RFP.

## **VII. Past Performance in Reporting Outputs and Outcomes**

EEANM and project manager, Barbara Garrity, have experience successfully reporting outputs and outcomes for the 24 sub-grantees of the EPA Sub-Grants Program 2011-2013 as well as the outputs and outcomes related to the capacity built by the partner organization in the administration of the Sub-Grants Program. We recognize the importance of achieving results with public funds and have used surveys, feedback forms, questionnaires, in-person interviews and other means to document grant outputs and outcomes with both numeric and qualitative summaries.

In addition to federal grant experience, we report outputs and outcomes for all of our grant activities. Accountability is essential to both the funder and the grant recipient so that we all know what has been achieved over the course of a project. We plan to use pre- and post-surveys with the students, use evaluation surveys with the teacher workshop and community meetings, and use a questionnaire with the community meeting to gain insight into the knowledge, interests and question of the community members.

## **VIII. Quality Assurance Project Plan**

We will be using existing data, primarily supplied by our expert presenters for the trainings and community meetings.